Remarks

Claims 10, 11, 15-17, 21, 23 and 25-37 are in the application. Claims 1-9, 12-14, 18-20 and 24 are canceled. Claims 28-37 are new.

It has come to our attention that the application as originally filed never included a claim number 22. As such, the claims presently on file skip from claim 21 to claim 23. In the interest of clarity, the claim numbering has been retained as it relates to the claims as originally filed. The Examiner is requested to properly renumber the claims once the application is allowed.

The Examiner indicated that claims 14, 21, 23 and 25 would be allowable if rewritten in independent form including all of the limitations of the base claim and intervening claims. Amended claim 10 includes the subject matter of previous claim 14 and all of the claims on which it depended, and is therefore in allowable form as indicated by the Examiner. Claim 11 and 17 are dependent on amended claim 10. Claims 15 and 16 have been amended to depend on amended claim 10. Claims 21 and 23 have been rewritten to include the subject matter of claim 20 upon which they depended, thereby rendering them allowable.

The Examiner indicated that claims 26 and 27 would be allowable if rewritten or amended to overcome the rejection under 35 USC 112, second paragraph set forth in the Office Action. Claim 16 has been amended to replace the expression “said group of destinations” in line 7 with the expression “said subset of destinations”, which has proper antecedent basis in line 5 of claim 26. This amendment is submitted to comply that should make claims 26 and 27 to comply with 35 USC 112, second paragraph.

As such, claims 10, 11, 15-17, 21, 23 and 25-27 all include allowable subject matter as indicated by the Examiner, and these claims are expected to be allowed.

The Examiner rejects claims 1, 9, 18 and 19 under 35 USC 102(e) as being anticipated by Smith (US 6,188,686). The Examiner also rejects claims 2, 3, 4-6, 8, 10-12, 17 and 24 under 35 USC 103(a) as being unpatentable over Smith in view of Beshai et al. (US 2005/0063370). The Examiner further rejects claims 7, 13, 15 and 16 under 35 USC 103(a) as being unpatentable over Smith in view of Beshai et al. as applied to claims 3 And 12, and further in

view of Ohyama et al. (US 2002/0070759). The Examiner also rejects claim 20 under 35 USC 103(a) as being unpatentable over Smith in view of Alpert et al. (US 6,044,209).

It is respectfully submitted that the claims rejected by the Examiner have either been canceled or are now made dependent on a claim that the Examiner indicated as allowable. Those rejections are thus moot. Therefore, the Examiner is respectfully requested to withdraw the rejections under 35 USC 102(e) and 103.

A brief discussion is provided regarding the Smith and Beshai references in order to outline differences which also apply to the subject matter in new claims 28-37.

Claim 28-33 describe a method and system for reducing power consumption in a TDM egress selection memory switch. The egress ports are grouped into at least two egress port groups. The ingress grain data is selectively propagated only to a selected egress port group, the selected egress port group having at least one egress port for which the given ingress grain is selected for output. This reduces the average power consumption of the fanout circuitry.

Claims 34-37 describe a method and system according to the present invention of power leveling in a TDM egress selection memory switch. Disabled grains are identified that will not be propagated through the fanout circuitry since, for the disabled grains, no selected egress port exists for a given timeslot. The disabled grains are internal to the switch. Bits in the disabled grains are then selectively overwritten in the fanout circuitry with a constant value, in order to reduce a timeslot transition peak power spike amplitude. This is reduced by making sure that the constant value with which the disabled grains overwritten includes some high bits and some low bits, so as to reduce the significant current spike that can occur if the data fanout in the fanout circuitry toggles from all zeroes to all ones. Preferably, the constant value includes an equal number of high and low bits or logic zero and logic one bits. A pair of constant values can be used to selectively modify two sets of disabled grains in different egress port switching blocks, with the two constant values being logical complements of one another.

In Smith (US 6,188,686), two input data units are connected to each input port of a cross-connect switching unit. (Please see Smith Figure 2). The switch connects different input ports

to different output ports at different times. (Smith Col 2, lines 18-28). Because there are two data units connected to each port of the switch, only one can be active at one time to avoid contention and data corruption. Thus, data units require an output disable function (Smith Col 2, lines 47-50). It may more beneficial to view the data disable function as a method of constructing a 2:1 Multiplexor as that is indeed what Smith is actually implementing. Input data units require buffering to store ingress data if its output is disabled in favor of the other input data unit or if the output port of the switch is used by a third input data unit. (Figure 2 and 6).

The claimed invention is fundamentally different when compared to Smith. Data from all input data units are broadcast to all output data units. Therefore, there is no cross-connect switching unit. As the output of each input data unit does not share a bus with any other, there is no chance for contention and data corruption inherent in Smith. In the claimed invention, data disable refers to not sending a data grain to output ports that do not need to see the data grain, in order to minimize power and current transients. Data disable is not used to implement multiplexors. Thus, unlike Smith, data disable is not a requirement for correct operation, but rather is an improvement on power and noise. In Smith, if a data disable block is erroneously set to send data, the device will corrupt data. In the claimed invention, power consumption is reduced or leveled.

In Smith, data needs to be buffered at the input data unit until it can be sent over the cross-connect switching unit. (Figure 3, Col 15, line 63- Col 16, line 24) To be sent, the other input data units of the data delivery groups must not be using the shared input port of the switch and the destination output port of the switch must not be used by another input data unit. The claimed invention does not require buffering for scheduling delay at the input data unit. There is some buffering in the output data unit to place the data into the correct time-slot at the egress TDM stream. Thus, the purpose and location of buffer is very much different from Smith.

As the device envisioned by Smith bears little resemblance to the current application, Smith does not provide material teachings to anticipate the current application, in particular as presently claimed.

Paragraph 52 lines 4-17 of Beshai (US 2005/0063370) shows how one would form a buffer similar to that in Smith for TDM traffic. This combination of teachings is not applicable to the claimed invention, as there are no buffers of the type described by Smith needed. Smith is mainly concerned with ATM traffic while Beshai is concerned with handling a wide variety of traffic. The claimed invention is limited to TDM traffic and is thus specifically optimized. Buffers as described in Smith and Beshai are not necessary.

The applicant is unable to locate any description of CLK and DAV of Fig 8 in the text of Smith. As it is drawn below DAV, it would seem reasonable to conjecture that it is a clock signal used to sample DAV. However, there is no evidence it is, in fact, a clock. In the claimed invention, a clock pulse is used to align all inputs to the same SONET frame alignment. Since Smith deals with ATM cells, it would not teach about this type of alignment.

Smith Col 26, lines 21-28 states "In the Figure 13 apparatus the connection units are again such that the data units are formed into data delivery groups. Because the connection units serve a time-division multiplexing function the data received by each connection unit from one data unit of a data delivery group to the switching-unit input port for that group at a different time from the data received by that connection unit from the other data unit of that group." Clearly, Smith is describing a method for sharing an input port to the connecting unit, namely TDM. TDM is therefore an internal format in Smith. The above quote is unrelated to current application. In the current application, there is no connecting unit. All data is broadcast to all output data unit. TDM refers to the kind of service the device in the current application supports. It is not an internal format used to share ports.

As such, neither the Smith nor the Beshai references, nor the other applied references, either alone or in combination, teach the methods and steps of power consumption reduction or power leveling as recited in new claims 28-37. As these references are directed to different areas of application having different characteristics and problems as outlined above, their teachings cannot be combined in order to result in the teachings of the invention as presently claimed.

The Applicant submits that the present application is now in condition for allowance and looks forward to receiving a Notice of Allowability.

The Commissioner is hereby authorized to debit $460.00 from Deposit Account No. 501593, in the name of Borden Ladner Gervais LLP, representing the fees for a two month extension of time.

The Commissioner is hereby authorized to charge any additional fees, and credit any over payments to Deposit Account No. 501593, in the name of Borden Ladner Gervais LLP.

Respectfully submitted,

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